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Slaughtering of Stock—Which is the Most Humane Method? *

By WILMOT C. QUINNELL, M.R.C.V.S., M.R.S.I., WELLINGTON, N.Z.

When Dr. Reakes, Director-General of the New Zealand Department of Agriculture, did me the honour of inviting me to present some paper for discussion at this meeting of the Veterinary Section of the Australasian Association for the Advancement of Science, it appeared to me that the subject indicated in the title would be an appropriate one to submit at this juncture, for the following reasons:—

Firstly, as far as I have been able to ascertain, the technique of slaughtering stock for food has not been discussed by any previous gathering of professional men, although articles bearing on the matter have appeared from time to time in the New Zealand Press. Secondly, owing to the existing Government veterinary inspection of meat at all abattoirs and meat-works throughout the Australian States and New Zealand, I may safely remark that all we veterinarians at this meeting have at some time or other been employed in this highly important branch of the meat industry. Thirdly, it is a subject of some moment in England at the present time, as will be seen from the report published in the *Veterinary Record* of the 9th September, 1922, of the deliberations of the annual meeting of the National Veterinary Medical Association, held in the Guildhall, Bath, on the 2nd August, 1922, at which the following resolution was agreed to:—

As there is a great diversity of opinion on the question of the humane slaughtering of animals intended for human food, and the subsequent effect on the flesh of the various methods used, we suggest that a Government Committee of inquiry be instituted to investigate the whole subject; the Committee to consist of members of all professions and trades interested.

During that discussion General Sir L. Blenkinsop read an extract from a letter to the *Daily Mail* by the secretary of the Association of London Retail Meat Traders, as follows:—

With regard to the mechanical killer, the meat trade takes up this strong and unanswerable position—namely, that an inquiry must be held by the Government into the whole question of the use of mechanical implements in slaughtering. All reliable scientific opinion is, however on the side of the pole-axe for slaughtering animals intended for food, and there is also ample evidence, from the men's point of view, that they consider the mechanical slaughtering implement to be dangerous.

It is apparent from these extracts that what is sought is the most humane method of killing stock at slaughtering-establishments. In the word "humane" we understand to be implied an active endeavour to discover and relieve animal-suffering, and especially to prevent it. As the world advanced in civilization, and social and humane instincts developed, the subject of animal rights and cruelty to dumb animals has attracted the attention of thinkers from earliest times. One of the maxims of the Buddhist and Pythagorean canons was "not to kill or injure any innocent animal." The rights of animals now are subordinate to almost anything that can be construed into a human "want" or consideration, including flesh-eating, fur- and feather-wearing, hunting, and scientific research to save man from disease or prolong life.

The thought of pain among dumb creatures distresses many minds, but there is every reason to believe that pain among animals is less acute than in human beings. In order to live, man must kill, but in doing so his methods should be as merciful as those shown by animals that live upon other living creatures. To illustrate this I take the following extract from a most admirable article by a natural historian, Ernest Bryant, in *My Magazine*:—

There comes to the memory, as we run the mind's eye over the flesh-eaters and preying animals, not so much a thrill of horror at their deeds, but a sense of wonder at their efficiency and unerring skill in causing swift, sudden, painless death. It is one of the most astonishing things in the world that dumb brutes show as sure an instinct for an instant, fatal blow as if they had studied anatomy at one of our hospitals. A stoat knows exactly how to inflict instantaneous death upon a rabbit or a hare. An eagle or a raven goes as surely to the right spot for attack upon a fallen deer or weakening sheep as a fox goes to the fatal spot in a domestic fowl; and a humble spider, spinning her silken web in our garden, is unerring in her death-stroke as a cheetah that fastens its teeth in the straining throat of a buck. Whether the wound is made with sledge-hammer paws and vice-like jaws, or with the poison fang and stiletto of the insect, the end is almost certain of

* Paper read at the meeting of the Australasian Association for the Advancement of Science, Wellington (N.Z.), January, 1923.

terrible but painless suddenness. Now, there is mercy in this. There is no conscious pity in a tiger, but it is so extraordinarily fitted to its volcanic outbursts of power that it kills too soon to hurt. It has such strength that it might hold its victim by means of its grapnel-like claws and munch it alive, but, as a rule, it instantly kills. A python has such appalling force that it could swallow its prey alive, but, throwing itself like a cowboy's lasso around the body, it gives one convulsive strain, then crunch, crack, and life is in a second squeezed from the victim's body. These things have been and must be. We find the lower world as devoid of mercy in intent as it is among cannibal human beings, and it shocks and stuns a civilized mind. But as these things must be, then it is consoling to believe that death comes to the victims with such a rush of expert art as to be painless, or at worst only the overpowering agony of a fleeting second. Thus, in so refining the implements of destruction in the slayers, in so incredibly perfecting the instinct for the right blow at the right place at the right moment, Nature is kind in her seeming cruelty.

Matters Relating to Killing.

Before entering upon the question of various methods of slaughter it is essential to give a few introductory and explanatory notes on certain matters relating to killing, and thus avoid repetition when each system is brought under review.

Operation of Bleeding.—This is carried out by the opening of the (*a*) throat or cervical blood-vessels, or (*b*) chest or the anterior thoracic blood-vessels, its completeness depending on the following conditions: In all methods involving the destruction or injury of the brain there is danger of defective bleeding, as is the case with shooting, pole-axing, pithing with a spear—the animal drops in convulsions. The practice of "fidging"—using a cane 3ft. long and thrusting it through the hole made by the pole-axe or through the incision made at the nape of the neck—by the action it produces on the body, breaking up nerve influences to blood-vessels, hinders blood-flow, and bleeding is incomplete. Animals whose heart receives a wound with the sticking-knife, termed "overstuck," will not bleed completely. With fatigue, excitement, or overheating (thermic fever), bleeding is incomplete. In bleeding, the posture of the animal is a matter of some importance; the recumbent position is associated with diminished force of the circulation, and should therefore be avoided.

Speaking generally, the blood constitutes about one-twelfth of the total weight of the body. The amount of blood drawn at the time of sticking varies with the size, age, and accuracy of sticking, with the condition of the animal, and the length of time that has elapsed since it has taken food and drink. The quantity of blood, roughly speaking, may be put down as: In a young animal, eighteen months old, about 2½ to 3 gallons; in a three-year-old bullock, about 4 gallons; and in aged milking-cows, sometimes 4½ to 5 gallons. The rate of movement of the blood through the arteries is estimated to be about 1ft. 8in. per second, and through the capillaries at about 1in. per minute.

Effects of Struggling or Convulsions.—Liebig, in his "Letter on Chemistry," mentions the case in which the flesh of a roebuck, which had struggled after having been caught in a snare, gave rise to symptoms of poisoning. According to Gautier, pigs have been fatally poisoned through being fed upon the flesh of a horse which had died during its struggles when being broken in; and, like Liebig, he has known of cases of human poisoning by the flesh of roebucks which had been in a state of terror or exhaustion. From these and many other cases that could be cited there can be little doubt that harmful physiological alkaloids are elaborated by cells of living animals, through undue violent movements of the muscular system during the process of slaughter, as in the cases of (*a*) roping and throwing a bullock preparatory to killing, and its striving to get free; (*b*) the use of the pole-axe and bullet-firing appliances, when the animal drops in convulsions; (*c*) the unnecessary practice of fidging, producing violent spasms of the muscular system; (*d*) the struggles of death—namely, the convulsions which declare themselves as a prelude to death. All these conditions may be avoided or minimized by causing concussion of the brain.

Reflex Action, Movement, or Motion.—In physiology this means those comparatively simple actions of the nervous system in which a stimulus is transmitted along sensory nerves to a nerve-centre, from which again it is reflected along efferent nerves to call into play some muscular, glandular, or other activity. The actions are performed involuntarily and often unconsciously, as is the contraction of the pupil of the eye when exposed to strong light.

Cadaveric Rigidity, "Setting," or Rigor Mortis.—This condition is the characteristic stiffening of the body caused by the contraction of the muscles after death. It comes on more or less speedily according to temperature or climate, and also after death under different methods of slaughter—both of which circumstances also influence its intensity and duration. It is retarded by cold, but in very hot weather the rigor is slight and brief, or may hardly be appreciable. The relaxation of the carcase as the rigor passes off is one of the earliest signs of incipient decomposition.

These phases of the subject are of some importance in considering the merits and demerits of various methods of slaughter, when reference is made to "duration of bleeding," "duration of reflex," "amount of blood," and "keeping-qualities of meat."

Methods of Slaughtering.

(1). *Pole-axing, followed by Bleeding.*

This is the usual method of slaughtering cattle in England. The implement of knocking-down is a bull-head axe or pole-axe, a weapon or tool consisting of an axe-head on a long handle, combined with a blade like a pick or punch. After the animal is secured by being tied with a rope round the neck to a ring in the wall or floor, the slaughterman strikes it on the forehead with the pole-axe, the punch end of which crashes through the frontal bone into the brain-case, mutilating the brain-substance. On the beast falling to the

ground it is immediately pithed, after which the fidging-cane is thrust through the incision at the nape of the neck and vigorously worked about until the limb-movements cease. The butcher then sticks the beast by severing the anterior thoracic vessels, when the life-blood gushes out. The average duration of bleeding is about two to three minutes.

Similar disadvantages apply to this method of slaughter, but in somewhat lesser degree, as are found in the use of mechanical killers that cause mutilation to the brain and, together with the practice of fidging, bring about a condition hindering complete bleeding of the carcase. Again, the operations of pole-axing and bleeding are carried out on the same floor; the recumbent position of the body on the floor does not facilitate accurate sticking, as it at times causes the unsightly condition termed "bodying" (blood-effusion under the membrane lining the chest-cavity).

(2). *Pithing or Spearing, followed by Bleeding.*

This is the usual method in vogue throughout the slaughterhouses and meat-works of Australasia. The instrument is a spear, consisting of a long pole with a chisel-shaped steel attachment at one end of it. The butcher stands on a plank in the pithing-pen, just above the head of the animal, and thrusts his spear-end into the space or hollow at the base of the skull, dividing or injuring the spinal cord at its junction with the brain. The animal immediately drops. The slaughterman enters the pen and completes the pithing operation by a stab with a sharp-pointed knife in the occipital region. The animal is then pulled out of the pithing-pen on to the dressing-floor, where the fidging-cane comes into operation, after which it is bled, being stuck in the thoracic region.

A very important objection to this mode of killing is that on the animal being stabbed with the spear it drops in convulsions, in many cases lasting a considerable time, depending on the degree of injury to the spinal cord. Apart from the actual system, it is the practice in some slaughtering establishments to run a number of cattle into the pithing-pen at one time, so that the killing of one is done within the sight of the others, which causes them much unnecessary suffering while waiting their turn. Further, the use of the spear or pither must be in skilled hands. Sometimes even an efficient operator misses the vital spot; in such cases the animal becomes infuriated, and the slaughterman may lose his temper, with the result that his poor victim receives many stabs before it is finally despatched. Pithed or speared animals do not seem to bleed so well; spearing causes the retention of much blood in and around the neck region, giving rise to a condition of "dirty neck," which becomes more noticeable and detracts from the appearance of frozen fore quarters on their being thawed for sale.

(3). *Direct Bleeding, Cervical or Thoracic, without Stunning or Shooting.*

This is the common method of slaughtering sheep, and, in some places, calves and pigs. It is also practised by the Jews, Mohammedans, and races of a number of other countries for the slaughter of all animals intended for food.

Sheep: The animal is cast on its side on a wood grating, and is held firmly by the slaughterman placing the weight of his knee on the sheep's shoulder. He grasps the chin with his left hand, at the same time bending its head back to extreme tightness. The knife is then sharply run across the throat, severing the windpipe and the principal blood-vessels and the spinal cord as well, as he forcibly dislocates the neck of the animal. The sheep bleeds into a special blood-drain for collection, while the sliding-door of the waiting-pen is pulled down on the body, holding it fast during the death-struggles.

Calves: These animals are usually hung up by the hind legs, and sometimes they are stunned by a blow on the head with an axe-head; in other cases they are pithed with a knife-stab at the nape of the neck; in yet other cases they are bled without previous stunning or pithing.

Pigs: The method of slaughtering pigs at bacon-factories and abattoirs consists in the animal being hoisted by means of a chain (which in turn is attached to the drum of a windlass worked by hand) by one of the hind legs to an overhead bar. The moment it reaches this bar the slaughterman sticks the pig with a sharp narrow-bladed knife, severing the anterior thoracic vessels.

In reference to sheep and calves, the method of slaughter—direct bleeding—is quite effective in despatching these smaller animals expeditiously and painlessly, and with no detrimental effect to the meat or market value of heads, brains, or tongues. In reference to slaughtering pigs, it would be a great advantage and more humane if the pigs were stunned by a mallet immediately they are hauled on to the rail; it would stop their horrible squealing, the swaying of their bodies, and the paddling action of the fore feet, all of which are disconcerting to the sticking operator.

The Jewish Method of Slaughtering Cattle.—The beast being brought into the slaughterhouse, a rope with a slip-noose is placed round its neck, and is fastened to a ring fixed to a post close to the flooring, when it is made taut, the head being thus brought close to the ring; a second noose of chain is passed round the hock or hind shank, and is drawn sharply to cause the creature to fall or to be cast down easily by the attendants on its side. The leg-fastening having been firmly secured, the head is twisted back to extreme tightness. The Jewish skilled operator then appears, and, with a knife the blade of which is about 15in. to 16in. in length and sharp as a finely set razor, cuts the neck through to the spinal column by drawing the knife swiftly and smartly across. The time from cutting the throat to the last throes of the dying beast, as a rule, is four minutes. It is claimed by Dr. Dembo, from a series of tests made by him, that in the case of animals killed by direct bleeding (the Jewish method) one hour and ten minutes elapsed between killing and onset of rigor mortis, and in the pole-axe method two hours and thirty-five minutes.

Hence the progress of putrefaction is much less rapid in Kosher meat than in meat slaughtered by the pole-axe.

The law of England makes special allowance for the Jewish mode of slaughter. The method is essentially a humane one, as in the sheep insensibility at once supervenes; but the fact of other subjects being much larger, and the cutting of the throat crosswise, causes the blood to gush and spout in all directions, rendering this detail horribly repulsive. Further, it has been noticed that the butchers have occasion to sever these cervical blood-vessels again, consequent on their swelling and becoming partially closed, with the object of hastening the flow of blood. I fail to see why the Jews do not adopt stunning with the hammer preparatory to bleeding, thus dispensing with the process of roping and casting of the beast, and the unnecessary excitement, terror, and struggling of the animal on being under restraint for killing. Again, the Mosaic law is very strict regarding the killing of animals for food, and its ordinances are such as to secure to the fullest extent the removal of the blood from the carcase. This object would be far better accomplished by stunning with the hammer, as will be discussed later.

(4). *Shooting, followed by Bleeding.*

The first improvement on the ordinary pole-axe was a mechanical killer invented in Germany and known as the slaughter-mask. The apparatus consists of a leather mask with a metal-plate attachment containing a hole into which a hollow-ended bolt is placed. The mask is adjusted over the forehead of the beast, and then the bolt is tapped with a mallet, driving it through the cranium into the brain. The animal is then pithed with a knife and bled. Since this invention many instruments—bolt-striking and bullet-firing—have been designed on similar lines, such as the Kleinschmidt spring-bolt apparatus, Cash's and Behr's pistols, the Siegmund shooting-mask, Stachl's shooting-apparatus, the Speary killer, Stoff's Swedish and Greener's Safti killer, and latterly the R.S.P.C.A. humane killer and the R.S.P.C.A. slaughtering-pistol.

From personal experience, and from information on the subject gathered from reports on the scientific tests and demonstrations made, I have learned sufficient to prove that this method of shooting has no advantage over the ordinary modes of slaughter in daily use at slaughtering-establishments, but, on the contrary, has shown the following disadvantages in its employment: There is a certain amount of danger in the use of these bullet-firing instruments. The shooting does not appear to be as humane as the ordinary methods in daily use, as animals are not always rendered unconscious, and there is no reduction in the duration of the reflex action. Animals do not bleed so readily and completely, therefore the keeping-qualities of meat are affected. In the case of pigs and sheep, the heads and brains have their market value reduced.

(5). *Stunning, followed by Bleeding.*

This is the method adopted for cattle in the slaughtering-establishments in America. The implement used for the purpose of stunning is a large sledge-like hammer, which should not be less than 6 lb. or 7 lb. in weight. The body of the hammer-head should be of even circumference, short and straight, with both ends slightly convex. The animals are driven one at a time into a specially constructed narrow pen, having a platform on top, on which the operator stands. On entering the pen the animal's attention is attracted to the small opening in the front partition, and while peering through this the blow is dealt, the slaughterman dropping the beast with one blow of the hammer high up on the forehead. One of the side partitions then slides up, and the stunned animal is automatically thrown out to the dressing-floor. The butcher immediately places a leg-chain around one of the hind fetlocks, the chain is hooked on the hoist-chain, and the animal is hoisted by means of the driving-shaft, which in turn is worked by a dynamo in the slaughterhouse. The stunned animal is thus placed on an overhead bar, and is pushed along the track-bar to the grating over the bleeding-pit. With the animal thus suspended it will be apparent that the butcher can stick more expeditiously and with greater accuracy than with the beast lying on the floor; and, further, there is no soiling of the hide with blood. Bleeding is carried out by opening the large anterior thoracic vessels, and the animal being suspended by the hind leg ensures rapid and complete drainage of the carcase of its blood contents.

The effect of a stroke or blow from such a hammer as described is concussion of the brain—namely, a shock to the brain from injury, but without visible effect on its substance, thus differing from contusion as produced by the pole-axe or humane killers, where the brain-substance is more or less lacerated and accompanied with varied degrees of consciousness. Although the brain is the seat of emotion, reason, and sensation, it is of itself non-sensitive, as portion of it may be cut away with little or no effect. An animal deprived of the cerebrum or forebrain retains the special senses of sight, sound, taste, etc., but the intellectual faculties are lost. In conclusion there is a period of collapse; the animal lies stunned and motionless, with breathing slow and heavy—a desirable condition. The felled beast is now in a complete state of anathesia, or, pathologically speaking, analgesia—the incapacity of feeling pain in a part, although the tactile sense may be more or less preserved. Under these circumstances the operation of sticking must be absolutely painless. The quivering or twinge movement noticed on the butcher cutting off an elliptical section of the skin of the neck preparatory to the act of sticking the animal is only a tactile reflex—a reflex movement due to stimulation or irritation of nerves of touch. Therefore this sudden momentary twinge following on the butcher's incision of the skin does not denote pain as many are led to believe.

So, under this system of hammer and knife we obtain all that can be desired in slaughtering stock

for food. Pain is avoided ; bleeding is thorough, with no detrimental effect to the meat ; and the operator requires little or no training. As far back as 1897 I recognized the need of more humanity in the slaughtering of animals for food, when Queensland was the first colony in Australasia to pass an Act of Parliament for the veterinary inspection of meat intended for export, and I had the honour of being appointed to administer that Act. Spearing or pithing was in general practice in those days, and I witnessed some revolting and brutal exhibitions from the misuse of the spear or pither on stock that happened to be extra wild, or with those unfortunates comprising the tail-end of a big day's killing, when the operator was exhausted from work and heat. It was through seeing such sights that I advocated the American method, and was instrumental in getting it first adopted in the largest slaughtering-establishment, the Queensland Meat-export Company's Works at Brisbane, where they put through three hundred to four hundred cattle daily. The method was highly commended, and proved satisfactory in every way. Then, coming to New Zealand and taking service under the Government, I was posted in 1905 to the Wellington Meat-export Company's works for duty, and, as a new slaughterhouse was under construction, I recommended the then manager, the late Mr. Dilnot Sladden, to adopt the hammer-and-knife system of slaughter. This was done, and proved itself far preferable in every way to the old mode of spearing and pithing.

Conclusion.

Finally, after the experience of life's practical knowledge relating to this subject, gained not only in Australia and New Zealand, but in England, Scotland, and France during the period of five years from 1915 to 1920, I state my opinion that there is no method so far devised which is more efficient in causing swift, sudden, painless death than the employment of the hammer and knife. It should one day become the universal method of slaughtering stock for food.

London College Staff Appointments.

At a meeting of the Governors of the Royal Veterinary College, held on 17th July, the resignation of Major A. B. Mattinson, O.B.E., M.C., F.R.C.V.S., D.V.S.M. (Vict.), of the Chair of Materia Medica, was accepted with regret, and Mr. E. G. Langford, M.R.C.V.S., who has acted as Resident Hospital Surgeon during the past year, was appointed as his successor.

At the same meeting, Mr. A. Sams, who passed the Final Examination of the Royal College of Veterinary Surgeons on the 13th July, was appointed Resident Hospital Surgeon for the ensuing year.

It is regretted that, in last week's issue, the error was made of attributing the clinical article, "Multiple Fracture of both Sesamoids," to Captain H. S. Elphick, the author being his brother, Mr. C. Elphick.

Royal College of Veterinary Surgeons.

July, 1923, Examination Results.

Glasgow :—

Class "A."	*Class "B."*
J. Y. Bogue.	J. Barclay.
*E. Clark.	D. Canning.
J. B. Kyle.	*G. Simmins.
C. Livingstone.	D. N. Walker.
*M. McColl.	*W. Weipers.
*H. Macdonald.	
A. MacNiven.	
J. F. Mason.	
H. V. Morris.	
A. MacGilp.	
*J. P. Walker.	

Class "C."	*Class "D."*
W. A. Allan.	J. Plenderleith.
D. S. Barbour.	*A. Cruickshank.
D. S. Brown.	J. Weir.
J. Currie.	W. C. Auld.
G. D. W. Davidson.	J. McS. McLinden.
L. B. A. Grace.	A. Sutherland.
*J. McQuaker.	J. T. Taylor.
J. H. S. McKie.	J. Stewart.
W. T. Macgregor.	*S. C. Abbott.
*T. McWilliam.	J. Somerville.
W. C. Maitland.	R. Turnbull.
*B. J. M. Nairn.	G. W. Begg.
W. J. H. O'Mara.	J. A. Bradley.
R. Renfrew.	W. T. Macgregor.
*A. Sillars.	H. Begg.
W. C. Smith.	W. R. Smith.
A. Walker.	W. S. Gordon.

* Denotes 2nd Honours.

Edinburgh :—

Class "D."	
H. B. Allan.	C. P. Inglis.
W. G. Beaton.	W. J. Ironside.
J. L. Brain.	*R. F. Montgomerie, B.Sc.
E. R. Callendar.	R. B. H. Murray.
J. Carmichael, B.Sc.	*G. Pfaff, B.Sc.
H. M. M. Duff.	P. L. le Roux, B.Sc.
P. D. Dunn.	J. Small.
G. Edmondson.	R. S. Smythe.
K. A. Forker.	*J. L. Stewart, B.Sc.
J. R. Frean.	G. Wilson.
*H. W. Griffiths.	T. P. Young.
E. F. Hardwick.	

* With Honours.

Industrial Spirit.

A correspondent has requested us to "ventilate the injustice which prevents veterinary surgeons from obtaining industrial spirit for dispensing purposes like other qualified bodies, in view of the fact that it is very necessary

to employ a proof spirit in canine practice." At the same time, our correspondent encloses the communication from a firm of druggists which led him to approach us, and which contained the following passages: "We are sorry to hear that your local excise authorities will not give you permission to purchase the uncoloured industrial methylated spirit. It seems to us that if you buy the rectified spirit duty paid, and convert it into tinctures, you may be able to obtain a rebate of the duty. . . . We know that retail chemists and medical institutions can obtain this rebate on the spirit which they employ in their processes, and we see no reason why the same concession should not be extended to veterinary surgeons."

We have submitted the question to an authority, from whom we have obtained the following reply:

"First I must say that there is no injustice at all in the matter. Your correspondent seems to have confused industrial spirit and rectified spirit. Industrial spirit must *not* be used in dispensing. It is solely intended for industrial purposes where mineralised methylated spirit is not suitable, and its use is restricted to certain licensed persons. Very few chemists are allowed to use it, and there is no reason why it should be allowed to be used by veterinary surgeons. All tinctures must be made with rectified spirit. It is not worth while for a veterinary surgeon to make his own; when he buys them he gets them at prices which take into account the rebate allowed on medicinal spirit.

"The medicinal treatment of animals by professional men cannot be termed an industrial process. Consequently a veterinary surgeon cannot be supplied with industrial spirit.

"In regard to *rectified* spirit, I think a practitioner could get the rebate if he made his own tinctures. But, as I remarked above, he would not save in the long run, for he would have to keep proper books for the inspection of Inland Revenue authorities.

"Industrial spirit as again I have pointed out, must not be used in dispensing, and, moreover, it is *not so* used by other qualified bodies. The value of proof spirit in canine practice is a matter of opinion. Certainly, at present, the price of proper tinctures is not at all unreasonable. If they are considered too expensive, there are available cheaper aqueous tinctures of official strength.

"Industrial spirit is methylated spirit *minus* mineral naphtha (not naphthalin), and the colour appears to me to be a magenta dye.

"I could refer here to the great disadvantages of using tincture of iodine made with methylated spirit or industrial spirit, but I will refrain, as it would necessitate the explanation of chemical processes. I will, however, say this, that, in my opinion, the advantages of using the tincture properly made outweigh in a marked degree its slightly greater cost. Best of all is a recently prepared solution of iodine in rectified spirit (90 per cent.).

"Altogether, I cannot advise that any step be taken in the matter. Any official support given to the use of tinctures made with a spirit other than rectified would be taken as an authorisation of the use of inferior preparations in the treatment of animals. This is surely to be deprecated. The search after cheapness in our profession is most distressing, and does not redound to our credit."

The Veterinary Record.

28th July, 1923.

National Veterinary Medical Association of Great Britain and Ireland, Limited.

Cheques should be made payable to the Acting General Secretary at the Offices of the Association, 12 Buckingham Palace Road, S.W.1.

N.B.—Members receiving this paper in a brightly-coloured wrapper will please understand that their subscription is already overdue, and should be forwarded at once to the above address.

THE ROYAL VETERINARY COLLEGE.

After more than a century spent in most useful work of truly national importance, yet without proper public recognition, existing on the fees derived from students and from practice, and from the subscriptions of a comparatively small body of well-wishers, the Royal Veterinary College at Camden Town has at last been granted £25,000 for the erection of a new research institute in connection with the College. This is the direct result of the strong recommendation of the Advisory Committee on Research into Diseases of Animals, the grant being made by the Development Commission through the Ministry of Agriculture.

It will come as a surprise to many that, following so close on the endowment of a research institute and chair of animal pathology at Cambridge, a further grant should be made to the London School, as the opinion has been very freely expressed that the time had arrived when it would have been advantageous to remove the London College to Cambridge, where greater facilities for its work were stated to be found, and where it would have the exceptional advantage of close association with Cambridge University. Moreover, that the Research Institute attached to the College would be better able to pursue investigations into animal diseases if situated in rural rather than urban surroundings, and would also be able to have a close liaison with the medical profession in the study of comparative pathology. When the Cambridge appointment was announced, the comment was made that the Governors of the College had lost a golden opportunity, and that the future would see the eclipse of the senior veterinary school and the advent of a new type of veterinary surgeon, who would be entirely trained in a University.

The Advisory Committee who made the recommendation of an immediate grant to the London College were evidently not entirely influenced by these views, though at one time it would appear that they were carefully considered and eventually abandoned. There are abundant and convincing reasons why the Royal Veterinary College as a training school for students should remain in London. The Board of Governors consists of a number of gentlemen who are eminent in many ways, and many of them have

exceptional knowledge of animals, of agriculture and of business, and they must be credited with a certain amount of common sense. If it were a good plan to move the College to the country, no doubt they would have taken this step at the proper time. What reasons had they for keeping the College in London and developing the Research Institute there? In the first place, cost. New buildings in any way similar to those in London, in spite of their limited accommodation, would cost something near £50,000, and if this sum were used to enlarge and equip the London College, a new institution, say at Cambridge, with equal buildings and facilities could not be built for quite double that sum. Veterinary students would gain nothing by being associated with a school of agriculture. Acquaintance with farm stock cannot be acquired at a College, and must be gained in actual practice. Moreover, the clinical material at Cambridge would be totally inadequate for the proper training of the student. Cambridge could not supply as many clinical cases in one week as may now be seen at the London school in one day. This London clinic is one of the greatest assets of the College, and has been built up as the result of years of industry. A large portion of it is supplied by the animals of subscribers—members of the corporate body of the College (a chartered institution) who live in and around London. Seventy or more animals came to the College daily for treatment, and if the College were moved to the country, this valuable practice would be lost almost entirely, together with the subscriptions which form a large part of the annual income. A certain glamour or prestige attaches to a University such as Cambridge or Oxford, and attractive and desirable as it may be for any student or graduate, living at these universities is expensive, and the pockets of farmers and others of the middle class, from which the large majority of veterinary students are drawn, are not deep. All the advantages which could be gained at Cambridge from association with university students can at the present time be gained in London, through the close association of the College with London University, and at about half the expense.

London is, without doubt, the chief centre of medical education and research, and the Research Institute of Animal Pathology will be splendidly situated to carry out its work and to assist in elucidation of many of the problems of Comparative Pathology, of which we now read and hear so much. It is to be hoped that the present ties existing between the College and the London University may be strengthened as suggested in the report of the Advisory Committee, since it is on these lines that most benefit will accrue to our profession, and especially to students and research workers at the Royal Veterinary College.

It is all to the good that the Development Commission, while granting the necessary funds for a new establishment at Cambridge, has not lost sight of the claims of older institutions. The profession will benefit from the knowledge that at long last our claims to public recognition are being more seriously considered.

Clinical Communication.

The Editor will be glad to receive from members and others contributions to this column of reports of interesting cases

Trypanosomiasis of the Pig: A Correction.

By H. E. Hornby, Veterinary Pathologist, Tanganyika Territory.

Recently, in this journal, Mr. J. M. Armfield (1922 and 1923) referred to an interesting case where a pig was infected with, and presumably died from, trypanosomiasis. He made me responsible for describing the organism as *Trypanosoma vivax*. I regret that, when I wrote to Mr. Armfield, I had not made the necessary measurements which almost alone differentiate *T. vivax* from the closely allied *T. uniforme*. Since then I have done so, and a hundred linear measurements show that the causal organism was a monomorphic trypanosome with an average length of only 15 microns, whereas, as can be seen from the accompanying chart, similar measurements of typical *T. vivax* show an average length of 24 microns.

T. uniforme is a little known parasite, which previously appears to have been identified only in Uganda and in Principe. It is mildly pathogenic for domestic ruminants, but its action on pigs has not been recorded until now. The blood smear which was sent to me, and from which the figures were made, was rich in the parasites. Most of them resembled the type specimens described by Bruce and Co-workers (1911), but I noticed that one had three or four granules in the cytoplasm anterior to the nucleus. A number were in process of division, and instances of multiple fission, which I have not seen in *T. vivax* smears, were noted. So-called "involution forms," concerning the nature of which there is doubt, although probably they are merely degenerate parasites, were present in fair numbers, as were also "ghost forms," of which all that can be seen are the shadowy outlines and faint nuclei.

Numerous references to porcine trypanosomiasis can be found scattered through the pages of Knuth and Du Toit's *Handbuch der Tropenkrankheiten* (1921). Not included in them are the report by Bevan (1917) in Southern Rhodesia, and Aldige (1920) in French Guinea, on severe outbreaks. Study of this literature shows that different strains of trypanosomes vary in their pathogenicity and different races of pigs in their resistance. Thus most strains of *T. brucei* are pathogenic for European pigs in East Africa, although the native-owned pigs of that part show considerable resistance to all but the most virulent strains. Similarly *T. congolense* is harboured without symptoms by many pigs in the Belgian Congo, but one variety of the same parasite—for which, however, Bruce (1913) claims specific rank, and named *T. simiæ*—is very pathogenic for pigs. So in Asia: *T. evansi* may be a harmless harbinger in the blood, or it may cause death.

I can find no authentic account of mortality in pigs due to *T. vivax*, and as *T. uniforme* closely resembles this latter in most of its properties, the

record by Mr. Armfield of the occurrence in a sick pig's blood of numerous trypanosomes which are presumably *T. uniforme* is of especial interest.

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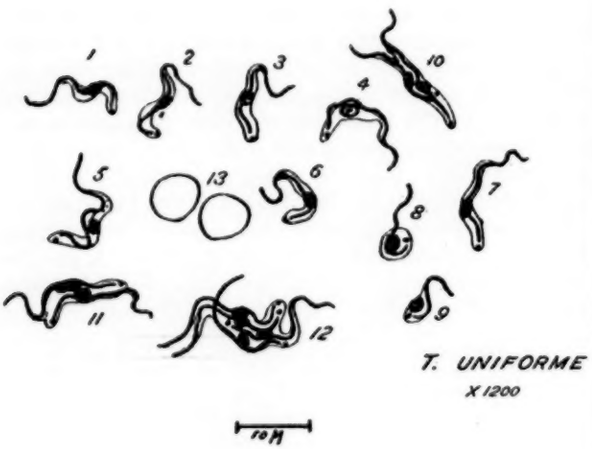
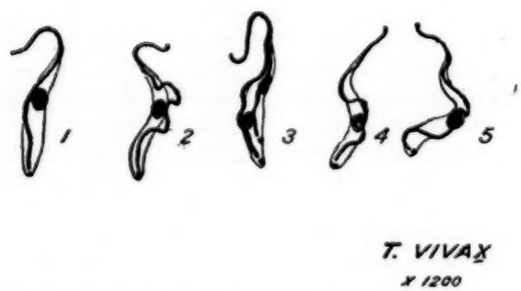




EXPLANATION OF FIGURES.

Trypanosome uniforme.

1—7. Normal individuals.
8 and 9. Involution forms.
10. Normal binary fission.
11. Unusual type of fission.
12. Multiple fission (also unusual).
13. Erythrocytes.

(Continued at foot of next column.)

Association Reports.

Midland Counties Division.

The quarterly meeting of this division was held at the Swan Hotel, Stafford, on Tuesday, May 8th, under the presidency of Mr. A. B. Forsyth, of Cannock. There were also present Messrs. B. De Vine (Birmingham), L. C. Tipper (Birmingham), F. T. Prince (Ashbourne), J. W. Conchie (Kidderminster), J. T. Allen (Burslem), J. C. DeVille (Uttoxeter), J. G. Hoban (Whitchurch), H. Tudor Hughes (Oswestry), W. F. Aston (Ludlow), A. Mackenzie (Market Drayton), H. W. Steele-Bodger (Tamworth), G. Howie (Birmingham), L. W. Heelis (Solihull), T. H. Hobson (Leicester), R. P. Holmes (Birmingham), R. B. Palmer (Warwick), T. Marriott (Pershore), J. Robertson (Stourbridge), A. A. Forsyth (Cannock), R. Murray (Rugeley), R. Clunas (Hodnett), J. A. McLauchlan (Stourport), T. Chambers, junr. (Wolverhampton), J. Martin (Wellington), S. M. Woodward (Birmingham), J. O. Powley (Sutton Coldfield), T. D. M. Martin (Wellington), J. F. Hutchinson (Eccleshall), W. H. Brooke (Handsworth), and H. W. Dawes (West Bromwich), Acting Secretary.

Apologies for unavoidable absence were announced from Sir John M'Fadyean, Sir Stewart Stockman Sir G. Barling, Professor Hobday, Professor Wooldridge, Messrs. M. Tailby, J. Slipper, R. C. Trigger, R. Hughes, D. Forwell, R. Cockburn, Elder, J. J. Burchnall, Tart, Wm. White, H. Turner, Findlay, T. J. Brain, E. Ringer, Phillips, Dale, M. Sadler, Parsons, Cartwright, Banham, Parkes, McGregor, Hiles, F. L. Gooch, F. B. O. Taylor, Ludlow, H. S. Reynolds, Connell, W. Grasby, R. H. Over, W. F.

(Continued from previous column.)

Trypanosoma vivax.

Drawn to the same scale, to show greater size.

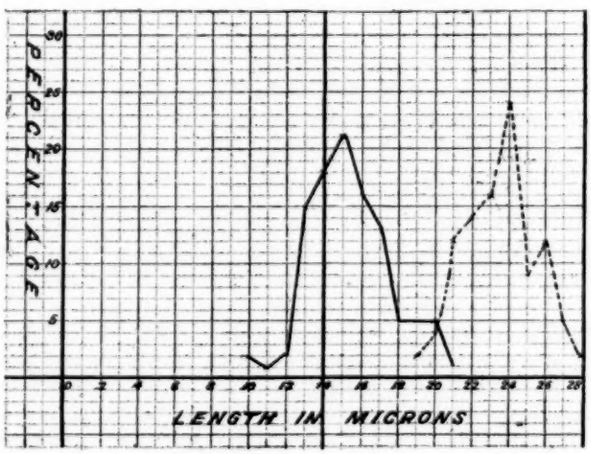


Chart of 100 linear measurements of Trypanosoma uniforme (unbroken line).
For comparison a similar T. vivax chart (dotted line).

Ison, J. Whyte, Carless, J. R. A. Jones, the Hon. Sec. (Mr. H. J. Dawes), and others.

President's Hospitality.—This being the first meeting during his year of office, the President entertained the members to lunch, and at the close of a very excellent repast, Mr. De Vine, in a few well-chosen words, proposed Mr. Forsyth's health. He thanked him on behalf of all present for his hospitality, and said that such a good attendance augured well for the rest of the year.

The President briefly acknowledged the compliment, and said he relied on the whole of the members to support him in the chair.

Meeting of the Council.

Prior to the general meeting, a meeting of the Council of the division was held, Mr. Forsyth presiding, when it was recommended that the August meeting be held at Leamington, on Friday, August 31st, assembling at 12.30, to hear an address on "Grass Disease," by Mr. W. Brown, of Aberdeen, lunching at 1.30, and spending the remainder of the afternoon in viewing the beauty spots of the neighbourhood, ladies to be invited. A sub committee, to make the local arrangements, was appointed as follows: the President, Mr. Powley, Mr. Heelis, Mr. Palmer, Mr. De Vine, and the Acting Secretary.

A letter was read from the Gloucestershire branch of the Farmers' Union with regard to the fees to be charged for inspecting dairy herds for tuberculosis. It was recommended that the Hon. Secretary be instructed to reply to the effect that this matter is in the hands of the National Veterinary Medical Association, by whose decision that division would abide.

Arising out of a suggestion made at the previous meeting, it was recommended that on the occasion of the August meeting the paper of the day be printed and circulated in advance to facilitate discussion.

It was recommended that the Hon. Treasurer be authorised to write to all members who are in arrears for four years and upwards, informing them that unless they paid their subscriptions at once their names would be erased from the list.

At a later stage, the report of the Council was submitted to the general meeting and unanimously adopted, together with the various recommendations contained therein.

The Hon. Secretary's Absence.—The President referred to the absence of the Hon. Secretary, Mr. H. J. Dawes, who, he said, was recuperating after illness. They would all be delighted to hear that Mr. Dawes was on the high road to complete recovery. He was at present at Bournemouth, but would have come to that meeting had not his medical adviser urged him not to do so. This was the first meeting in 37 years that Mr. Dawes had missed. They all knew how much the division owed to Mr. Dawes, who was heart and soul in the work, and he proposed that a letter be sent to him conveying the good wishes of all the members and their very hearty congratulations on his restoration to health.

Mr. Powley thought a telegram from that meeting would be better, and this suggestion was warmly endorsed and immediately acted upon.

Mr. H. W. Dawes said he could assure them that his father would be very much encouraged by their kind and thoughtful message, and he would value their good wishes highly.

Nominations and Elections.

Mr. W. J. Bambridge and Mr. A. A. Forsyth were nominated for membership.

On the motion of Mr. De Vine, seconded by Mr. H. W. Dawes, the following gentlemen were duly elected members of the Association:—Lieut.-Colonel T. Marriott, R.A.V.C. (Pershore) and Mr. J. R. Barker (Hereford).

Mr. De Vine moved, and Mr. Tudor Hughes seconded, that the President be asked to attend the Congress of the Royal Sanitary Institute as a delegate, and this having been unanimously agreed to, the President undertook to do so. It was stated that Mr. Tipper and Mr. T. Chambers (Dudley) would also probably be going to the Congress, and they were also invited to represent the division.

The Field Distemper Fund.—The Acting Secretary produced correspondence, deferred from the last meeting, inviting the division to subscribe to the Field Distemper Fund, and several members expressed the view that the division ought to be identified with the movement.

Mr. Tudor Hughes said that in the research work that was being undertaken the veterinary profession was represented by Mr. Buxton and Professor Hobday, and their conclusions could not help but be beneficial to veterinary practice. He thought they ought to support such a worthy object.

Mr. Brooke was of the same opinion. He was afraid they would not get to know any more about distemper than the doctors knew of measles and scarlet fever, but if any good did come of the inquiry, veterinary surgeons stood to gain.

Mr. Aston, in supporting the proposal, urged that the reports that the Research Council published from time to time be circulated among the members. He understood that a subscription carried with it the right to receive a copy of the reports.

Eventually, on the motion of Mr. Hughes, seconded by Mr. De Vine, it was resolved to make a donation of five guineas to the Field Distemper Fund.

Mr. Tipper asked whether the division could see its way to making a donation to the Poultry Research Fund, in the work of which, he said, Sir Stewart Stockman, on behalf of the Board of Agriculture, was taking a hand.

Mr. H. W. Dawes said he did not doubt the usefulness of the movement from a veterinary surgeon's point of view, but he thought they should know more about it. He moved that the matter be deferred.

This was seconded by Mr. Aston and agreed to.

President's Address.

The President then delivered the following inaugural address:—

Gentlemen,—On assuming the duties of President of this division for the ensuing year, will you allow me to say at the outset how very much I appreciate the honour conferred upon me, and to assure you that during my term of office no effort on my part will be spared to further the interests of the division and its members.

When looking at the names of the worthy men who have occupied the presidential chair, I feel that the holding of such office is no sinecure, and I shall rely upon you to give me that loyal support and kind feeling requisite to make our meetings in the ensuing year as well attended and successful as they have been in the past. The last year, under the presidency of my friend Mr. De Vine, has been a splendid one, not only in point of interesting meetings, but, above all, in large attendances, and I hope that I shall be able to follow in his footsteps.

The position of this division to-day calls for a little attention. Founded, as many of you are aware, in 1866, it has gone on from strength to strength. Since I have been a member, looking back along the years, I have seen the division grow steadily in membership and influence until it occupies its present proud position—a position, gentlemen, which I think you will agree with me is second to no other similar body in the country.

I do not propose to weary you with a long digression, but there are one or two points upon which I should like briefly to touch. At the present moment one of the chief points of interest is the provision of a pure and clean milk supply. The new Milk and Dairies Bill is, I am convinced, a step in the right direction, and is, I venture to think, one in which the Veterinary Profession has played no mean part. In the issuing of licences for the production of graded milk we have our work to do, work for which the veterinarian is particularly fitted, and I trust that very shortly we shall have the matter placed on a basis which will be satisfactory to all parties concerned.

Recently the limelight of public opinion has been focussed on the question of veterinary research. I, with many others, trust that in the advancement of knowledge advantage will be taken of the co-operation of all sides of the Medical and Veterinary Professions.

It is too much, perhaps, to hope that the individual veterinary practitioner can assist in such work, but, after all, the wealth of clinical experience in the field is of the utmost importance to the research worker, and by placing your actual experience at his disposal the road to the elucidation of many aspects of animal disease is made less difficult.

I would wish briefly to touch upon the work of our R.C.V.S. Council as it appeals to me. Looking at the work accomplished by the Council in the last few years, I think we have every reason to be proud of our governing body. The Council is a representative body elected by the vote of the whole profession, and I much deplore the destructive criticism of the man who continually decries its work and yet does nothing to alter that position. Healthy criticism I welcome, believing as I do that it is the basis of sound judgment and execution, but to harp repeatedly upon its shortcomings without assisting in any way is a rapid way to undermine the foundations of our profession. I think that, in particular, the action of our Council in approaching H.R.H. The Prince of Wales to become associated with our profession is one with which all of us are highly delighted.

The passing of the Veterinary Surgeons Act is a step which has been preceded by arduous work by our Council, and I sincerely hope that by its provisions the finances of our Royal College of Veterinary Surgeons will be placed on a sound financial basis.

Lastly, a word with regard to the position of agriculture, with which, gentlemen, we as a profession are closely identified. Agriculture has been passing through a period of almost unequalled depression which has, in its turn, reacted upon many of us to a great extent. I think, however, that the low water mark has now been passed, and with Government support and assistance its position will surely, if slowly, improve in the future. It is so easy to become pessimistic, to decry the cheerful words of others, but I would remind you, gentlemen, of the truest saying of which I know, "To-day is the to-morrow we dreaded yesterday," and it is upon that hopeful note that I would wish to close my short address.

Whilst again expressing my thanks, I shall rely upon you and the zealous officers of the division for your whole-hearted support, so that at the end of my term of office we may look back upon the addition of another successful and progressive year to the calendar of the Midland Counties Division.

Mr. BROOKE said he would only be voicing the feeling of the meeting if he said how much they had all appreciated the President's address. As one of the oldest members of the division, and as one regular in his attendance, the President, as was evident from his remarks, took a lively interest in all that pertained to the interest of the profession. He moved a vote of thanks to him for his address.

This was seconded by Mr. HUGHES and heartily adopted.

The Days of Meeting.—Mr. CONCHIE said he thought it would suit the convenience of members if the meetings of the division were always held at the end of the week. Many of them had markets to attend, and it was difficult to get away in the early part of the week. He moved a resolution giving effect to his suggestion.

Mr. ROBERTSON seconded.

The ACTING SECRETARY pointed out that such an arrangement would involve an alteration of the rules, which at present provided for the particular days on which they were to meet.

Mr. CONCHIE thereupon gave notice of his intention to move that the rules be altered accordingly at the next meeting.

Mr. G. HOWIE, of the City of Birmingham Veterinary Department, read a paper on "Bovine Tuberculosis and the Public Milk Supply."

[Mr. Howie's paper, together with the subsequent discussion, will receive separate publication.—ED.]

(Continued at foot of next page).

Derbyshire Division.

A meeting of the Derbyshire Division of the N.V.M.A. was held at the Royal Hotel, Derby, on April 19th, 1923.

The President (Mr. F. Aulton) occupied the chair, and there were also present: Messrs. Bagshawe, J. C. Heather, A. J. King, H. Briggs, F. T. Prince, A. Levie, H. Fairer, and the Hon. Secretary (Mr. E. Marrison), with Capt. O. V. Gunning as a visitor.

The minutes of the last meeting were taken as read, and signed.

Mr. G. R. Green, Nottingham, nominated at the last meeting by Mr. De Ville, was accepted in membership on the proposition of Mr. BRIGGS, seconded by Mr. HEATHER.

The PRESIDENT gave notice that at the next meeting he would propose for membership Capt. O. V. Gunning.

Mr. HEATHER suggested that all members should nominate their assistants for membership.

Mr. MARRISON pointed out that that would often mean that the principal would have to remain on duty while the assistant attended the division's meetings.

Mr. HEATHER thought the suggestion would be a good thing for increasing membership, and would create additional interest even if the principal had to pay his assistant's fee. He was firmly of opinion that every qualified assistant should be a member of the division. There had been considerable discussion in the profession of wrong things having been done, and he could conceive a member of a division receiving a complaint and replying, "It was done by my assistant, who is not a member of the division." If an assistant was a member, he would have the interests of the division at heart, and would do all he could to assist his employer in that respect. The Derbyshire Division was formed for the development of veterinary science and practice.

(*Continued from previous page*).

The PRESIDENT proposed a vote of thanks to Mr. Howie for his paper, as to the merits of which, he said, there could only be one opinion.

This was seconded by Mr. MACKENZIE and heartily carried, and Mr. HOWIE, in acknowledgment, said it had been a great pleasure to him to address a meeting of veterinary surgeons on a subject that was so dear to his heart.

The PRESIDENT said a vote of thanks was also due to Mr. H. W. Dawes for the able manner in which he had deputised for his father. The secretarial work could not have been better done, and they were all very much obliged to him.

Mr. HUGHES seconded the motion, which was carried by acclamation.

Mr. DAWES, JUNR., said he supposed that sort of thing ran in his family. He was very pleased to have helped the division in this matter.

The proceedings then concluded, the members taking tea together before separating.

H. J. DAWES, F.R.C.V.S., *Hon. Sec.*

Mr. PRINCE thought a principal was as liable for the actions of an assistant who was not a member as for those of an assistant who was.

Mr. MARRISON said if assistants expressed a desire to become members, it was one thing, but if they did not it was quite a different matter.

The discussion then dropped.

The PRESIDENT thanked members of the division for his election to that office, saying that he appreciated the honour very much, while feeling there was a great difficulty in following such men as Mr. Levie, Mr. Howe, the late Mr. Duckworth and Mr. Heather. However, he would do all he could to further the interests of the division. Unfortunately, since their last meeting there had been two very sad deaths of members in those of Mr. Duckworth and Mr. Abell. "They were both very valuable members of this division," said the President, "men who did their utmost to support the division in attendance, interest in meetings and in discussions generally. I should like to refer very briefly to the part these two gentlemen played in the formation of this division, as it may not be known to all the more recent members. I can quite well remember Mr. Duckworth ringing me up on the telephone one morning, and I believe he said he had had a letter from Mr. Marrison saying he was going to raise his fees for certain spring operations and proposed to do the same himself. I asked him why he should not raise his fees all round, and he replied that he would take upon himself the responsibility of calling a meeting of the veterinary surgeons in the district. The meeting was held at Ashbourne, and the members of the profession who attended discussed various things, arriving at decisions we thought fair and adequate. Mr. Duckworth went further, and called a meeting at Derby, inviting all veterinary surgeons in Derbyshire, parts of Nottinghamshire, and parts of Staffordshire. Mr. Abell presided at that meeting, at which this division originated.

I have known these two gentlemen for nearly forty years. Mr. Abell and I were at college together, and I think I have worked side by side with Mr. Duckworth for thirty-five years without a cross word having been spoken. They were men who always studied professional etiquette in every shape and form, and I do not know that either ever performed a shady action. I move that letters of sympathy with the relatives and friends of these two good men be sent, and that a letter of sympathy be sent to Mr. Furness and the family on the death of Mrs. Furness.

Mr. HEATHER: I wish to associate myself with the remarks of the President. I quite agree with him when he says these two men always did the right thing. I have known both for about twenty-eight years, and I have had nothing but kindness from them. No two people in the world could have done more for this division than they have done—our two friends. I second the motion.

The proposal was carried by members standing for a minute in silence.

INSURANCE INSPECTION.

In accordance with notice of motion, Mr. HEATHER moved:—

That the minimum fee for inspection of animals for insurance be that fixed by the insurance companies' Tariff Office.

He said he did not think they could fight against that reduction from 10s. 6d. to 8s. Premiums had got less and less, £2 being the amount now, where it had been ten or twelve guineas. The point was that, if members of the division did not make inspections for insurance, men who were not veterinary surgeons would do so, and would say to the owner of the horse, "If this animal is ill, you must send for me, as I am the man appointed by the insurance company." The insurance companies with one exception were in a ring, and had agreed on fees. The original proposition that the fee be 10s. 6d. stood in his name, but he realised things had changed, that proposition having been made when premiums were high.

Mr. MARRISON agreed that there was a great deal in what Mr. Heather said. It was not a question of fighting the insurance companies, but of fighting the outsider. The idea of the proposal was that if they could take the work it would keep the outsider out. Nor was it a question of what the insurance companies could afford, for they could afford the 10s. 6d. He asked how a client was affected if a veterinary surgeon refused to give a certificate to the insurance company on the death of an animal showing age, etc., in cases where a veterinary surgeon had not made an examination at the time the policy was taken out.

Mr. HEATHER replied that in such cases insurance companies would get out of paying—that was if the client could not get corroborative evidence that the particulars given in the first place were correct.

Mr. PRINCE added that, in some cases, insurance companies got out of all responsibility for inspection. At death the owner had to furnish a certificate on his own responsibility. If the veterinary's certificate on death did not agree with the proposal, the society disputed liability and did not pay anything.

Mr. HEATHER thought the greatest mistake in insuring live stock was to make renewals. A fresh proposal should be made each year. If that were done, the description would be fairly well correct.

Mr. FAIRER: They would not pay for a veterinary examination each year.

Major BAGSHAWE: We had an inspection of an animal nine miles away for the Legal, and about twenty-five questions had to be answered. We charged 12s. 6d. The Legal wrote back saying the fee would be 5s. On my objecting, they wanted to know why. I have replied to the effect that to answer all the questions a man needs to be a sanitary engineer, a surveyor, an analyst and an antiquarian.

Mr. HEATHER: You will probably find they are not a tariff office.

The PRESIDENT: Tariff officers pay a turning out fee of 5s., 3s. for the first animal, 3s. for the next, and so on, unless the animals are above a certain value. If they are valued at £100, you will probably get £1 1s. 0d., but 8s. is the lowest for the first animal. I think Mr. Heather is quite wise in bringing forward the proposition.

Mr. FAIRER seconded, and the proposition was carried.

REVISION OF FEES.

On the question of revision of fees, Mr. BRIGGS asked if he was in order in charging mileage from his branch surgery on those days when he was in attendance at that surgery. When the call came to the head surgery, he said, he charged mileage from there, no matter where the case might be.

Mr. MARRISON said they took account of the mileage from their surgery at Matlock on the days when they were there. When they were at Bakewell they charged mileage from there, and at the rate of 1s. 6d. per mile one way, not 1s. 3d.

Mr. KING: I also charge 1s. 6d. per mile.

Mr. HEATHER: A man in my district goes six miles out and six miles back and does a visit all for 3s. He is running a motor-bicycle, but I think I have also seen him in a Ford car. If you reduce your fee to 1s. per mile, it will hit this kind of man on the head.

Mr. PRINCE: I do not think you can reduce the mileage.

Major BAGSHAWE: I feel we should not drop below 1s. 3d.

The discussion was postponed to a later stage in the meeting, and eventually no change was made.

The scale of minimum fees decided upon was:—

Mileage: 1s. 3d. per mile one way.

Visits, 3s. 6d. Night visits (8 p.m. to 6 a.m.), 50 per cent. extra.

MILK, MINES, CASTRATION, AND OTHER MATTERS.

Mr. LEVIE asked members if they had had any experience of milking herds in which the udders were washed and dried before milking. He wished to know if it did any harm to the udders. There was a rumour among farmers that damage was done by the practice.

Mr. HEATHER: My experience with one herd has been that no harm is done. For twenty-one years one of my clients has insisted that udders shall be washed, and there has never been a case of a bad udder till recently, and that followed the changing of the cowman.

Major BAGSHAWE: I think farmers who make the objections want to remove the possibility of the compulsory washing of udders.

Mr. MARRISON: I have had no experience, but I should say that no harm would be done.

Mr. MARRISON read the regulations respecting Grade A milk, and said that, if the average yield of a cow was 400 gallons per annum, the increase of threepence per gallon which was to be paid for Grade A milk would mean an increase of £5 per cow per annum.

Mr. HEATHER reported that under the Coal Mines Act he charged £1 1s. 0d. for each pony in returning certificates of freedom from glanders. Six visits had to be put in. He had learned that the ophthalmic test might now be used.

Mr. MARRISON referred to the Burdizzi method of castration, and said he had had an opportunity of examining twelve out of about thirty animals he had operated on. In only one case was there not complete success. In that case they had not caught the cord, which had slipped. There was not the slightest difference between those done with the Italian operation and those on whom the operation had been performed with the knife, except that in one case a small testicle was left with a cord about twice as thick as a pencil. Unless they had a very experienced man to hold the cord, or held the cord themselves and let the man close the instrument, the cord slipped very easily. The instrument left two white lines, but did not damage the skin.

Mr. HEATHER asked the objection to putting the instrument across both testicles at the same time.

Mr. MARRISON said he had not tried it, but he thought the cords would slip.

Mr. HEATHER had tried using a torsion clamp, and had found that it just held the cord in position much better than holding with the hand. He was going to try the operation on a colt, though he did not know if it would be a success, as the formation of the testicle was different. He understood that horses were operated on in Italy by that method. In India the practice was to crush the testicle with three or four blows between pieces of *lignum vitæ* wood.

Mr. MCINTYRE was not present to move a motion, of which he had given notice, in reference to members not acting in an honorary capacity at shows, and the matter was further adjourned.

Mr. MARRISON reported receipt of a letter from the Council asking for authentic evidence in cases of misuse of tuberculin; and of notice of a meeting of the Association of Veterinary Inspectors containing a proposed resolution by Professor Hobday in regard to partners in a firm becoming members.

Mr. MARRISON reported writing to the Secretary of the Lancashire Division, stating that Derbyshire was prepared to bear a proportion of the cost of election circulars. In reply, he had received a letter stating that four associations were joining in the cost, which would be £11, and Lancashire was supporting Mr. Charles Blackhurst. Mr. Marrison pointed out that Derbyshire had promised to contribute up to £1 towards the cost of the circulars.

Mr. MARRISON reported receipt of a letter from the Royal (Dick) Veterinary College, giving particulars of the centenary celebrations proposed for November, and appealing for the assistance of members.

Mr. HEATHER said he thought they ought to send what they could afford individually and as a division.

Mr. MARRISON said the previous evening the Association had a debit balance of £1 6s. 4½d., with outstanding subscriptions of £8 18s. 6d. Much of that had come in, and he estimated that at the end of the year they would have a credit balance of £1 6s. 7½d.

It was decided to consider the letter further at the next quarterly meeting.

South Eastern Division.

A general meeting of this division was held at the Bull Hotel, Maidstone, on Thursday, May 17th.

The President, Major G. W. Dunkin, occupied the chair, and there were also present Professor Hobday (F.), C.M.G., F. C. Gillard, G. Wacher, C. W. Perrin, T. Hibbard, A. T. Crowther, E. L. Dixson, Major L. L. Dixson, A. Whicher, F. Crowhurst, E. Morgan, E. Ebbetts, C. Crowhurst, T. F. Hogben, F. Warren (F.) and Hugh P. Hogben, Hon. Secretary.

Visitors.—Messrs. B. Petley, C. Pierce and J. H. Wakefield.

Letters of regret at inability to attend were received from Messrs. J. Washford, C. Roberts, H. C. Rockett, J. B. Dier, J. Bell (F.) and W. W. Gulleford.

The minutes of the previous meeting, as published in the *Veterinary Record*, were taken as read, and confirmed.

CORRESPONDENCE.

Royal (Dick) Veterinary College Centenary Appeal. The appeal was strongly supported by the Secretary and others, but it was decided to defer action until the next meeting of the division.

Royal Counties Veterinary Medical Association Resolution.—The resolution from this division in favour of employment of a reporter supplied by the N.V.M.A.—provided that the expense would not exceed the sum of two guineas and railway fare per meeting—was unanimously supported.

Field Distemper Fund.—The Secretary was instructed to circularise the members for individual subscriptions, the total amount to be forwarded as representative and on behalf of the division.

MEMBERSHIP.—The resignations of Messrs. A. Spicer, A. G. Wilson and Professor T. W. Cave, from inability to attend, were accepted with regret.

Notice of removal of Messrs. O. V. Gunning and H. C. Rockett was received, both members having actively associated with the Society, and their services much appreciated, and the Secretary was instructed to write a letter of regret at their departure, and also expressing the best wishes of the division for their success in their new spheres.

NEW MEMBER.—Major C. Rose (Nonington) was nominated for election to the Society.

SURGICAL DEMONSTRATION BY PROFESSOR HOBDAY.

The chief feature of the afternoon's meeting was a surgical demonstration by Professor Hobday, accompanied by a dissertation upon the methods of application of chloroform for anæsthesia and of antiseptics to abdominal surgery.

The demonstration took place at the very suitable premises of Mr. Cecil Crowhurst (Maidstone), kindly lent for the occasion, and the operations included :—

(1) Vaginal ovariotomy in a vicious mare.
(2) Ovariotomy with excision of the uterus in the cat (flank operation).
(3) Excision of enlarged Harderian gland of the *membrana nictitans* of the dog.

Points emphasized were, the value of dry shaving and painting with Tr. iodi of seat of operation wound,

together with the safety of operating where normal care and the application of antiseptic principles were properly exercised. The flank site of operation was chosen in the cat, in view of the crouching position usually adopted by that animal, leading to adhesions in some cases where the *linea alba* site was chosen.

AN INTERESTING CASE BY THE PRESIDENT.

The subject was a smooth-haired terrier puppy, with congenital dislocation of the elbows. This case was shown, not by reason of its unusual character, but more because of its advanced nature and the very diagnostic and pronounced symptoms the animal showed. Its behaviour when progressing was almost entirely that of a rabbit. It usually travelled by using both hind legs at once in a hopping movement, and when stationary sat up as if begging.

There appeared to be some amount of bony enlargement of the bones forming the joints, and both were completely dislocated.

A vote of thanks was passed to all who had contributed to the success of the occasion, and it was decided to hold the September meeting of the division at Ashford.

An abbreviated report is due to the absence of reporter from the sessional part of the meeting.

HUGH P. HOGBEN, *Hon. Secretary.*

Central Division.

DISCUSSION ON PREVENTIVE INOCULATION AGAINST DISTEMPER.

Captain HAMILTON KIRK concluded his paper (published last week) on the subject of Preventive Inoculation against Distemper, in the following words:—

I consider that in very many cases prophylactic agents exert a useful effect, but that in others disappointment ensues; but in none have I found a bacterin do any harm. The first step will naturally be the fixation, beyond a shadow of doubt, of the causal agent, after which the creation of a preventive vaccine could be entertained with a more reasonable assurance of success; but in any case the desired end will prove extremely difficult to attain in view of the fact that even a naturally contracted attack *does not*, in all cases, confer an active immunity.

Mr. HENRY GRAY: I have devoted more than thirty years' close study to distemper, and found that in numerous instances the earlier stages of its manifestation are overlooked or are not connected with its later phases.

For some twenty years distemper has been proved to be due to an invisible virus, and the conclusions of Carré, who carried out his investigations under the supervision of Dr. Roux, the director of the Pasteur Institute, have been confirmed by other distinguished bacteriologists, even by those who formerly thought that they had themselves isolated the specific micro-organism.

It has not yet been considered possible to cultivate on artificial media any of those diseases belonging to the class filtrable viruses with, perhaps, the exception of avian plague and contagious pleuro-pneumonia of oxen. Passing over smallpox and other variolæ, and rabies, there are no other diseases than cattle-plague and swine fever due to ultra-microscopic viruses that can be artificially immunised against. In the case of cattle plague and swine fever, the crude method of simultaneous inoculation of virulent blood and hyperimmunised serum is adopted.

According to Carré and others, the filtrable virus is easy to find in the blood and in the pericardial, pleural and peritoneal serosity in the early febrile stage of distemper before secondary infections have set in and complications have arisen.

It is difficult to produce the disease with filtrates of blood and serosity obtained from advanced stages of the disease, although the nasal discharge may be virulent on inoculation. This difficulty has led certain bacteriologists to conclude that the essential virus becomes hidden in the cell elements. The minutest, or an infinitesimal, quantity of virus of a *true* contagious disease will give the malady, which will spread to incontact controls, and, on recovery, the animals are immune to natural contagion.

Some of the secondary organisms will, on cultivation, produce symptoms similar to those of distemper, but the animals, on recovery, are not immune to natural infection.

After using every prophylactic or curative on the market, I have been forced to conclude that none is of any use in preventing the malady or in bringing about a recovery. One should not conclude that because a certain agent is used and recovery is obtained that recovery was in any way connected with the agent used. In my experience more recoveries are to be obtained by the early recognition of the disease, keeping the animals confined in a warm clean place for four, five or six weeks, and feeding them on milk than by any other method of treatment.

I challenge Dr. Ferry or Mr. Kirk to prove that the methods they advocate will prevent animals contracting the disease by natural infection, or give any better results than the simple hygienic treatment I have mentioned.

I ask Mr. Kirk, if a prophylactic had been discovered, what is the necessity for the Field Distemper Committee to investigate this disease at very great expense?

Mr. MALE: I quite agree with most of Mr. Gray's views, and was going to make some similar remarks myself.

Although Ferry found the bacillus *bronchisepticus canis* and other organisms, he did not find the causal factor, as no doubt it is an ultra visible virus, but I would not like to go as far as Mr. Gray and to say that vaccines are not useful, and I do think that if you vaccinate you are doing something to help, because you are vaccinating against the secondary organisms. I have been using a certain kind of vaccine for a number of years, and it has more or less been successful even with hounds. Out of all the hounds that I vaccinated in one pack, only one died through dis-

temper, and that was only vaccinated once, and I do not think that you can have a better test than with a pack of hounds.

I quite agree with Capt. Kirk that the animal should be protected from infection for some three weeks after vaccination, and I am a great believer in serum treatment, as the serum contains the antibodies of all the organisms responsible for the disease, whether discoverable or not.

Mr. McIntosh: I should like to thank Captain Kirk for his very interesting paper, but I am afraid I do not know much about the subject. I might, however, mention that I think vaccination is a necessary precaution against distemper.

Captain Dunlop Martin thanked Captain Kirk for his very interesting paper, and proceeded: I should like to say that I have very considerable doubt as to the efficacy of vaccination. My experience of serum is that it is very successful in treatment in certain cases, *i.e.*, in those cases in which catarrhal and pneumonic symptoms are most in evidence; my idea being that, in such cases, the *B. bronchisepticus canis* is the organism most in evidence; hence the serum proving useful.

If asked whether I recommend vaccination, I am always very guarded as to my reply, but, of course, if asked to vaccinate I always do so. I recall an instance of a spaniel which I very carefully vaccinated, but the result was not at all satisfactory, as six months later the dog died from distemper, which makes one doubt very much the efficacy of vaccination.

Mr. Coleman: I should like to propose a vote of thanks to Captain Kirk for his very excellent paper. I am of opinion that there are a number of diseases termed distemper that are distinctly infectious febrile diseases, but caused by different micro-organisms; hence the so-called "many forms of distemper."

I have fought shy of vaccines, believing, as I do, that unless they contain the causal organisms of all the various forms of the disease, they are useless.

I vaccinated two dogs, belonging to different owners, some twelve months ago, which were perfectly healthy at the time, and about a week after they both had fits and died in twenty-four hours. I then obtained seven mongrel puppies, and inoculated all of them with the same vaccine, and they also exhibited precisely the same symptoms as the two already mentioned, and died within twenty-four hours of exhibiting the first fit. I am unable to prove it, but I have no doubt in my mind that the vaccine in this case was prepared from material obtained from a case where fits were present.

As is well known, there appear to be hepatic, enteric, pulmonary, and nervous forms of the disease, and all are called "distemper." But I firmly believe that each is caused by a specific organism peculiar to that particular form of the disease. I am aware that a patient may be affected with two or more of the forms, but I believe they become re-infected.

The Reply.

Captain H. Kirk: There seems to have been little in the discussion which calls for a reply. It must be known to all of us that Ferry is a man of vast experience as a scientist and clinician, and his opinions should be respected. He *does* claim that he can immunise dogs against distemper, and he having come to that conclusion, I do not know that *we* are in a position to refute what he says. Ferry asserts that the *Bacillus bronchisepticus* is the only organism found consistently and in large numbers in cases of distemper in the early stages; but that after a while they become obliterated by the advent of secondary organisms. It has been said by his critics that the *B. bronchisepticus* is a saprophyte found normally in every dog, though Ferry denies this, and maintains that if it is found in a healthy dog, that animal is a "carrier." But, even were the contention true, it would not, in my opinion, exclude the organism from being the possible cause of distemper, because we can reason from an analogous case. We are told by the medical profession, and it is generally accepted, that the tubercle bacillus can be demonstrated in a large majority of apparently healthy people—without, however, setting up any lesions. Let the natural defences and vitality of those persons become weakened, from any cause, and we then find the T.B. asserts itself and produces symptoms.

(*To be continued.*)

Notes and News.

The Editor will be glad to receive items of professional interest in these columns.

Diary of Events.

July 30th—Royal Sanitary Institute Congress at Hull, to August 4th.

August 6th—N.V.M.A. Editorial Committee Meeting, 12 Buckingham Palace Road, S.W., at 5 p.m.

Annual General Meeting of the N.V.M.A., August 15th, at York.

The notices, programme of events and papers to be discussed at the annual meeting at York are now completed and will be despatched to members on Monday next. A list of social functions and a railway voucher entitling the holder to a ticket for the double journey to York and back from any station in Great Britain will be enclosed, and it only remains for members to make a special effort and turn up in large numbers. The Provisional Committee and the Central Office have done their best to arrange a good programme and to make everything as easy and comfortable as possible for everyone. They are now

anxiously hoping that full advantage will be taken of all the arrangements they have made by every single person who can get away from practice.

It should be specially noted that it is necessary to fill in the spaces on the paper showing the social programme by stating the number of tickets required for each event. Unless it is known beforehand how many to expect, it is impossible to cater successfully for those who eventually decide to go. These forms, therefore, should be carefully filled in, *signed* and returned to Mr. H. W. Good, the local secretary, 1 Westfield Terrace, Scarborough.

Amongst the demonstrations, which no doubt will prove of exceptional interest, will be those by Professor O'Connor and Mr. Barker, illustrating their respective papers. Mr. Barker will demonstrate his method of manual clinical examination of a sterile cow. Major Hobday will operate on a bad case of a horse with an unusual swelling near the guttural pouch, which resists treatment, and also will demonstrate plastic surgery of the eyelid after enucleation of the eyeball in the horse, together with the latter operation. The local secretary, Mr. Good, will demonstrate his method of chloroforming and castrating a boar pig, 18 months to 2 years old.

Excellent arrangements are said to have been made at the Repository where the demonstrations take place, in order that everyone may secure a good view of what is being done. Besides the space on the ground floor, there is a low gallery, which should make an excellent point of vantage. While these demonstrations are proceeding, the ladies of the party (and men if they wish) are invited to Messrs. Rowntree's Chocolate Factory. We know that this is always attractive and will be very much enjoyed.

The visit to Messrs. Backhouse's Nurseries should also be very popular, for these beautiful gardens are renowned all over the country, and form one of the most delightful spots one could wish to visit. The grounds of West Bank, where the Association has been kindly invited to a Garden Party by Mrs. Hamilton, adjoin the nurseries, and are noted as being amongst the most charming in Yorkshire.

And then there is York itself. It would be impossible to see all York properly in the space of a week. It is one of our most ancient and interesting cities, and members may spend hours wandering about the quaint old streets, looking at the old walls, city gates and mediæval houses, or wondering at the beauty and grandeur of the Minster and its wonderful collection of stained glass windows. There should not be a dull moment for anyone who attends the Congress this year, and we hope to see a record gathering.

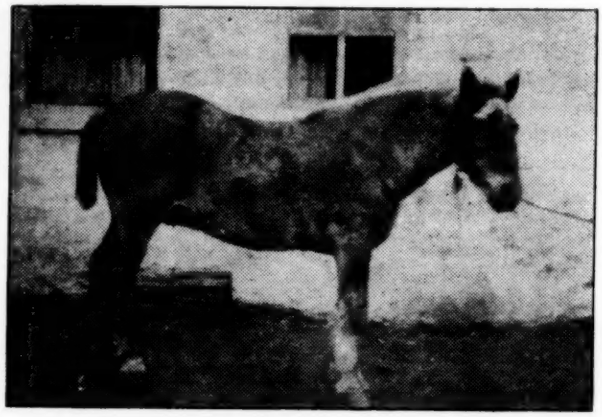
Correspondence.

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

All correspondence must bear the name and address of the contributor for publication.

The Editor does not hold himself responsible for the opinions of his correspondents.

A Mine "Victim."



To the Editor of the Veterinary Record.

Sir,—I am forwarding enclosed photograph as I think it will be of interest. The poor old chap served 17 years and 5 months underground, and was drawn out to be destroyed. The photograph was taken chiefly to illustrate the *cruelty* which takes place underground.—Yours truly, J. W. Rider, Ravenscroft, Beamish.

July 2nd, 1923.

Practitioners and Stock Inoculation.

To the Editor of the Veterinary Record.

Sir,—In the issue of the *Veterinary Record*, date 7 7-23, I read with disgust the last paragraph in the note by Prof. Gaiger *re* Braxy, more especially in these times when we are (?) trying to fight down quackery, and also restrict the sale of biologics to the profession.

Personally, I cannot see any reason why the veterinarian should not be called upon to undertake the inoculation. Distance from the practitioner is mentioned as an excuse. Why, if he had to go from the south to the north of Scotland the distance would not be so excessive, considering the amount of good to be done, and unless practice is different in Scotland from what it is here in September and October, I am sure the practitioner could find time to do the work. In April of last year I found time doubly to inoculate 100 hens against cholera, as tedious a job as inoculating 100 sheep, and taking as many persons and as much preparation. My services were amply rewarded, and this was done during one of my busy months.

However, so long as farmers are given encouragement, or if it be suggested that they do their own inoculation (they usually are not slow in taking a hint if it suits them), so long will quackery exist. To me, it is like getting in the thin end of the wedge—the rest usually follows.—Yours faithfully, W. E. Armstrong, Wigton, Cumberland,

July 8th, 1923.

A Plea—and a Suggestion.

To the Editor of the Veterinary Record.

Sir,—Your excellent article in the current issue of the *Record* has set me thinking.

Can we not help our professional brothers before they are down and while they are of some use in the world? Why not, indeed!

Might I suggest that the members of the profession be circularised for each to subscribe a guinea, to secure a sum sufficient to secure a Research Scholarship worth at least £1,000 per annum, and thus to ensure help to the profession, advantage to ourselves and adequate payment for it to be made worth the while of a good man to devote his energies and skill towards the advancement of veterinary science?

If you will start this, you may at once put me down as a subscriber.

May I sign myself as one who has the interests of the profession at heart.—Yours truly, E. WHITLEY BAKER, Glencairn, Wimborne.

July 11th, 1923.

Re Report N.V.M.A., "Record" of 21st July.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—The *Record* has mis-reported me *re* above, though Mr. Willett's remarks in the following paragraph make it clear there is some confusion. What I said was that heads of new institutes would almost certainly be asked to join and serve on the Committee in accordance with custom, and that that would include Mr. Gaiger, the new man at Cambridge, when appointed, and others having actual experience in or being engaged in research.—Yours sincerely, S. STOCKMAN.

Answers to Correspondents.

J. D. POTTIE.—Your suggestion is not one which we think we could adopt with advantage at the present time.

SEVERAL ENQUIRERS.—Yes, we hope to hear more of the doings of the notorious "Hygienic Milkman" when we meet at York.

The Editor begs to acknowledge the receipt of the following:

Clinical communications from Messrs. H. Buckingham W. E. Armstrong, and J. W. H. Masheter.

Reports from Messrs. F. Bullock, F. Whitehouse, W. W. Lang, and A. C. Kirkpatrick.

Communications from Messrs. J. W. Rainey, J. Blakeway, and E. White Wallis.

National Veterinary Medical Association.

PRESENTATION TO MR. J. B. BUXTON.

	£	s.	d.
Contributions previously acknowledged	67	1	0
Contributions received last week, from Messrs. J. Beattie, H. J. Dawes, H. W. Dawes, F. H. Sugden, N. Thompson, J. W. Pritchard, J. McKerlie, S. D. Lancely, T. Parker and H. M. Holland	5	5	0
Total ...	72	6	0

W. Gardner, M.R.C.V.S., Woodside, Maybole, officiated as judge of the Roadsters, Driving Classes and Jumping, at the eighty-seventh annual show of the Stranraer and Rhuis of Galloway Agricultural Society, held at Stranraer last week.

Diseases of Animals Acts, 1894 to 1914. Summary of Returns.

Period.	Rabies. Cases Confirmed. Dogs.	Rabies. Cases Confirmed. Other Animals.	Anthrax. Outbreaks confirmed.	Anthrax. Animals attacked.	Foot-and-Mouth Disease. Outbreaks confirmed.	Foot-and-Mouth Disease. Animals slaughtered as diseased or exposed to infection.	Glanders (including Farcy).* Outbreaks reported by the Local Authorities.	Glanders (including Farcy).* Animals attacked.	Parasitic Mange.* Outbreaks reported by the Local Authorities.	Parasitic Mange.* Animals attacked.	Sheep Scab. Outbreaks reported by the Local Authorities.	Swine Fever. Outbreaks confirmed.	Swine Fever. Swine slaughtered as diseased or exposed to infection
GT. BRITAIN. Week ended 14th July, 1923 ...	..	...	6	9	..	..	1	1	14	14	...	28	19
Corresponding Week in 1922	...	...	7	11	...	...	...	...	7	11	2	28	8
Corresponding Week in 1921	1	...	5	5	...	...	1	1	30	38	2	24	14
Corresponding Week in 1920	...		4	7	...	...	...	...	48	75	1	29	11
Total for 28 weeks, 1923 ...	...	...	413	472	10	514	3	3	516	814	345	1126	467
Corresponding period in 1922	1	...	314	363	1124	54906	1	1	761	1115	289	698	275
Corresponding period in 1921	22	1	302	365	41	2888	7	15	1586	2461	397	747	238
Corresponding period in 1920	4	...	235	277	65	8348	10	17	2751	4695	284	1248	483

NOTE.—The figures for the current year are approximate only. *Excluding outbreaks in Army horses.

IRELAND. Week ended 7th July, 1923	...	...	...	...	...	...	Outbreaks 1		3	1	7	
Corresponding Week in 1922 ...	...	...	...	...	...	...	2		1	1	6	
Corresponding Week in 1921 ...	...	...	...	...	...	...	3		4	2	10	
Corresponding Week in 1920 ...	...	...	...	...	...	...	...		1	...	...	
Total for 27 weeks, 1923	...	...	...	...	..	...	57		69	83	636	
Corresponding period in 1922 ...	1	1	...	...	...	...	66		128	147	817	
Corresponding period in 1921 ...	...	...	7	77	...	...	52		143	41	247	
Corresponding period in 1920 ...	1	1		...	1	3	75		152	6	22	

NOTE.—The figures for the current year are approximate only.

NEW INSTRUMENTS

Suggested by CHARLES ROBERTS, M.R.C.V.S., TUNBRIDGE WELLS.

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PRICE, NICKEL PLATED 6/-

Extract from "Veterinary Record."

The figures show a vulva suture which is easy to insert and is very effective. It is composed of a stout aluminium wire with a small aluminium ball screwed on to it at each end. For inserting, one ball is removed and replaced by a steel trocar. When it has been passed through the labia the trocar is removed and the ball re-applied. The trocar is bored transversely so that an ordinary pin or small nail may be passed through it to facilitate screwing and unscrewing. I have used this instrument for transfixing the skin in operations for umbilical (and other) hernia. It is easy to apply and to keep in position. Its advantages, in several ways, over the old-fashioned meat-skewer are apparent.

EMBRYOTOMY KNIFE. PRICE, NICKEL PLATED ... 14/6

Extract from "Veterinary Record."

The end of the blade is blunt and flattened transversely, somewhat resembling a duck's beak in shape. It is inserted under the skin at the fetlock through a small opening previously made with an ordinary pocket knife, and is pushed upward to the external scapular area. The skin along its track is thus severed in a few seconds.

A guard which is attached to the knife by means of two small screws prevents injury to other structures; and renders it one of the safest instruments I have used for this work. The muscles and tendons in the axillary region can also be easily cut by forcing them between the knife and its guard.

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Professor SIR JOHN MCFADYEAN, M.B., B.Sc., LL.D., M.R.C.V.S., Principal and Dean.

SESSION 1923-1924.

THE WINTER SESSION will commence on Tuesday, 2nd October.

Complete courses of instruction are given for the Diploma of the Royal College of Veterinary Surgeons and the B.Sc. Degree in Veterinary Science of the University of London.

An examination in General Knowledge for intending students will be held at the College on 27th, 28th, 29th, and 30th August.

Full particulars of classes, prizes (including two "Clement Stephenson Entrance Scholarships" of £80 per annum), fees, etc., are given in the College Calendar, copies of which may be had on application to

THOMAS C. WIGHT, *Secretary.*

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